

PATENT SPECIFICATION

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PROVISIONAL SPECIFICATION

Improvements in or relating to Fountain or Reservoir Pens

I, ANDREW STUART HORN, B.Eng., (British Nationality), of 60, Osmaston Road, Prenton, Birkenhead, in the County of Chester, do hereby declare the nature of this invention to be as follows:—

This invention relates to fountain or reservoir pens of the kind in which an air tube of small bore extending longitudinally into the ink reservoir and opening at its upper or inner end to the reservoir and at its lower or outer end to an ink passage of the feed bar co-operates with means for varying the pressure in the reservoir in order to charge the pen with ink. In pens of this kind it is usual to frictionally anchor the lower or outer end of said air tube within a central passage of the push-in feed bar which is located in a through passage of the nib-section, the open end of said air tube being in communication with the customary feed channel provided in the front of the feed bar by way of a lateral orifice or duct formed in the bar between said central passage and the feed channel.

It is the object of my present invention to provide improvements in the connection or communication between the air-tube and the front feed channel of the feed bar in order to facilitate the charging of the pen with ink, and my invention is characterised in off-setting said lateral passage or duct so that it opens at the rear or side of the feed bar and is connected at such point by way of a curved or tortuous channel formed in a side of the bar and leading to the front longitudinal feed channel; the arrangement being such that in the operation of charging the pen with ink—as by actuation of the usual ink sac—air in its outward travel is compelled to take an indirect or a more or less tortuous course around a side of the feed bar subsequent to clearing the front feed channel of residue ink, whilst a fresh charge of ink is induced directly into the reservoir by way of the front longitudinal feed channel which also supplies the ink to

the nib. With this arrangement the pen is effectively cleared of residue ink, and its re-filling facilitated without the presence of the undesirable features that exist in pens of the kind hereinbefore described wherein the air-tube is in direct communication with the front ink feed channel by way of the lateral passage or duct.

In carrying out my invention according to one convenient mode of embodiment, the front face of the feed bar is provided with the customary longitudinal ink channel which is in direct communication with the ink reservoir in order to conduct ink to the nib. The lateral air orifice or duct is formed off-set from said channel, preferably positioned and opening at the other side or rear of the feed bar and which lateral air orifice is in direct communication with said longitudinal channel by way of a connecting or tortuous channel or groove formed in a side face of the bar and which is preferably of the same cross sectional area as said longitudinal channel.

In the operation of charging the pen with ink, air is expelled outward by way of the air tube, lateral orifice, connecting or tortuous side channel, and the longitudinal feed channel communicating therewith, whilst ink is subsequently induced inwards direct to the ink reservoir by way of said longitudinal channel.

It will be obvious that the location of said connecting or tortuous channel may be varied without departing from the aim of this invention; for instance, it may be formed at right angles to said longitudinal feed channel or at any other suitable inclination thereto, or alternatively, it may be formed with a curved or helical configuration or contour, or a branch or extension of said feed channel.

Dated this 24th day of May, 1935.

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[Price 1/-]

COMPLETE SPECIFICATION

Improvements in or relating to Fountain or Reservoir Pens

I, ANDREW STUART HORN, B.Eng., (British Nationality), of 60, Osmaston Road, Prenton, Birkenhead, in the County of Chester, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to fountain or reservoir pens of the kind in which an air tube of small bore extending longitudinally into the ink reservoir and opening at one end to the reservoir and at its opposite end to an ink passage of the feed bar, co-operates with means for varying the pressure in the reservoir in order to charge the pen with ink. In pens of this kind it is usual to frictionally anchor the adjacent end of said air tube within a central passage of the push-in feed bar which is located in a through passage of the nib-section, the open end of said air tube being in communication with the customary feed channel provided in the front of the feed bar by way of a lateral orifice or duct formed in the bar between said central passage and the feed channel.

It is the object of my present invention to provide improvements in the connection or communication between the air tube and the front feed channel of the feed bar in order to facilitate the charging of the pen with ink, and my invention is characterised in off-setting said lateral passage or duct so that it opens at the rear or side of the feed bar and is connected at such point by way of a curved or tortuous channel formed in a side of the bar with the front longitudinal feed channel; the arrangement being such that in the operation of charging the pen with ink—as by actuation of the usual ink sac—air in its outward travel is compelled to take an indirect or a more or less tortuous course around a side of the feed bar, whilst a fresh charge of ink is induced directly into the reservoir by way of the front longitudinal feed channel which also supplies the ink to the nib.

With this arrangement a pen provided with my improved feed-bar is effectively cleared of residue ink, and its re-filling facilitated without the presence of the undesirable features that exist in pens of the kind hereinbefore described wherein the air tube is in direct communication with the front ink feed channel by way of the lateral passage or duct.

I will further describe my invention

with the aid of the accompanying sheet of explanatory drawings which illustrate, by way of example only, one mode of carrying the invention into effect.

In said drawings:—

Fig. 1 is a front elevation, Fig. 2 a side elevation and Fig. 3 a rear view, of a feed bar provided with my improvements.

Referring to the drawings which depict a feed for use in a fountain or reservoir pen of vacuum type, *a* denotes the feed bar—which is adapted to be located in a through passage of the nib-section (not shown)—and *b* an air tube of small bore having one end anchored and opening within a central passage *a*¹ of said feed bar *a*.

Said air tube *b* is adapted to extend longitudinally into the ink reservoir or sac of the pen so as to open at its opposite end into the interior of said reservoir. The front face of the feed bar *a* is provided with the customary longitudinal ink channel *c* which is in direct communication with the ink reservoir in order to conduct ink to the nib. A lateral air orifice or duct *d* is formed off-set from said front channel *c*, preferably being positioned and opening—as shown—at the other side or rear of the feed bar *a*, and which lateral air orifice *d* communicates with said longitudinal channel *c* by way of a connecting or tortuous channel or groove *e* formed in a side face of feed bar *a*; in order to enhance the object of this invention said channel *e* is preferably of the same cross-sectional area as said longitudinal channel *c*.

In the operation of charging the pen with ink—as by actuation of the usual ink sac or mechanism of the pen—air is expelled outward by way of the air tube *b*, feed bar passage *a*¹, lateral orifice *d*, connecting or tortuous side channel *e*, and the longitudinal feed channel *c* communicating therewith; whilst ink is subsequently induced inwards direct to the ink reservoir by way of said longitudinal channel *c*. When the pen is filled channel *c* conducts the ink direct to the nib in usual manner.

With such an arrangement the pen is more effectively cleared of residue ink and its re-filling operation facilitated than is the case in pens wherein the air tube *b* is in direct communication with the front ink channel *c* solely by way of a lateral duct as *d*.

- It will be obvious that the location of said connecting or tortuous channel *e* may be varied without departing from the spirit and scope of this invention; for instance, it may be formed at right angles to said longitudinal feed channel *c* or at any other suitable inclination thereto; or alternatively, it may be formed with a curved or helical configuration or contour other than that illustrated, or as a branch or extension of said feed channel *c*.
- Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—
1. In a fountain or reservoir pen of the kind hereinbefore referred to, a feed or feed bar having said lateral passage or duct off-set so that it opens at the rear or side of the feed bar and is connected at such point by way of a curved or tortuous channel formed in a side of the bar with the front longitudinal feed channel; the arrangement being such that in the operation of charging the pen with ink—as by actuation of the usual ink sac or mechanism of the pen—air in its outward travel is compelled to take an indirect or a more or less tortuous course around a side of the feed bar, whilst a fresh charge of ink is induced directly into the reservoir by way of the front longitudinal feed channel which also supplies the ink to the nib.
 2. In a fountain or reservoir pen as claimed in the preceding Claim, in which said curved or tortuous channel is of the same cross-sectional area as said longitudinal feed channel.
 3. In a fountain or reservoir pen of the kind hereinbefore referred to, a feed or feed bar substantially as hereinbefore described and illustrated in the accompanying drawings.
 4. A fountain or reservoir pen of the kind hereinbefore referred to, provided with a feed or feed bar substantially as hereinbefore described and illustrated in the accompanying drawings.

Dated this 19th day of May, 1936.

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Fig. 1.

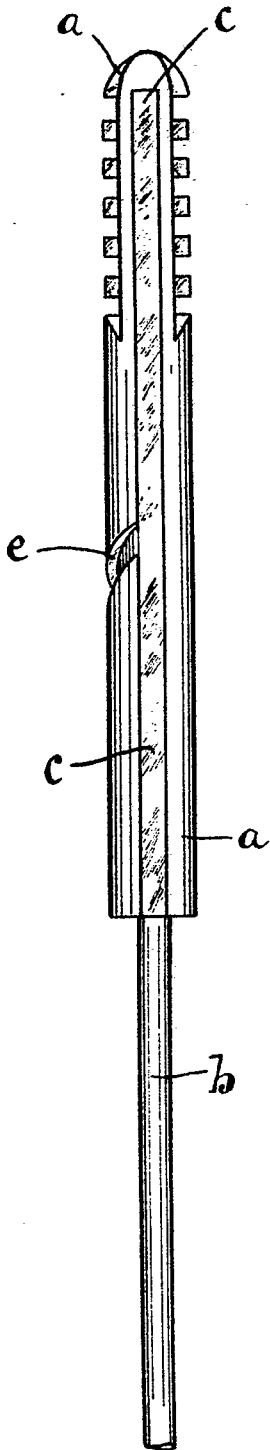


Fig. 2.

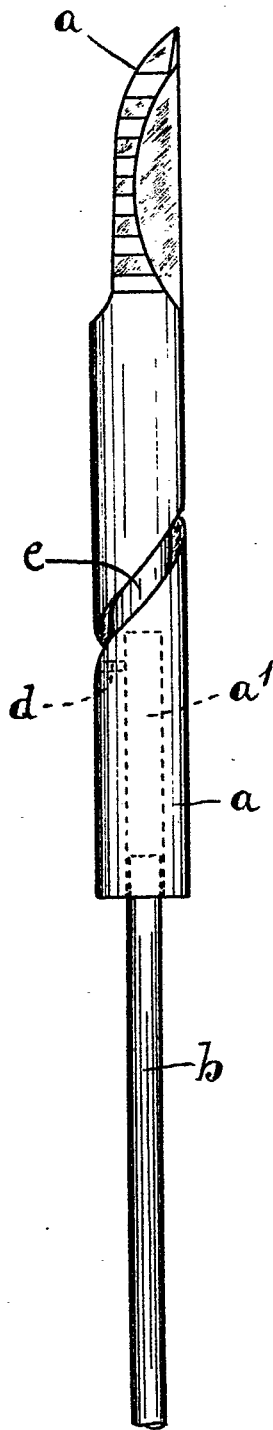
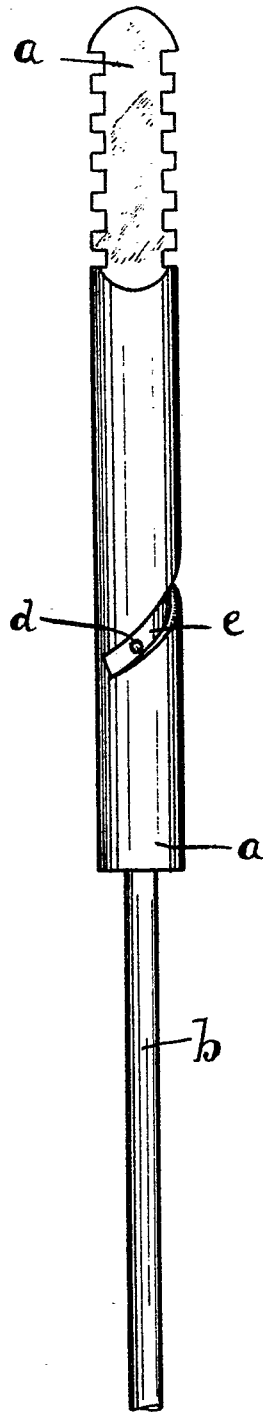


Fig. 3.



[This Drawing is a full-size reproduction of the Original.]